

Amazing Glades—

Missouri's Mini Deserts

By Joan McKee

The Eastern collared lizard is glad Missouri has glades. Look inside to learn about other animals and plants that live there.





NQPPADOL PAOTHONG

Prickly pear cactus

Everybody knows that scorpions and roadrunners live in hot, dry, cactus-filled deserts. You might be surprised to know they live in Missouri, too. Our state doesn't have sand dunes and high mesas, but we do have hot, dry areas where desert plants and animals make their homes. These small hot spots are called glades.

Glades usually are small, rocky openings on hills in forests, woodlands and prairies. They are formed where layers of rock cut through the surface. Some glades look like a shelf of rocks. Others resemble fields of rocks with soil in between. Not all glades look alike because they are formed by different kinds of rocks. Some glades have deeper soil than others. But all glades are dry, sunny areas where only certain plants and animals can survive.

Plants that live on glades have adapted to living without much water. Some plants, such as prickly pear cactus, store water in their thickened leaves. They use this stored water in times of drought. Some plants, such as hoary puccoon,



JIM RATHERT

Ozark corn salad

Ozark corn salad grows on limestone glades in southwest Missouri. Like bladderpod, this plant completes its life cycle in the spring before hot summer weather begins.

have tiny hairs on their stems. These hairs slow the evaporation of water from the surface of the plant. Other plants, such as prairie dock, have long roots that wind through cracks in the rock, seeking water deep down in the ground. Lichens and mosses trap water in spongy mats.

Some glade plants avoid the dry summer heat altogether. In the fall, seeds of the Missouri bladderpod plant grows into clusters of leaves, close to the ground. When the warm spring rains come in April and May, yellow flowers bloom from the 8-inch tall plant. When the weather gets hot in June, the Missouri bladderpod drops its seeds and dies. The seeds wait until the cooler weather in the fall before they begin to grow. Seeds of some glade plants can remain dormant for many years. They wait until the right amount of soil and water are available, then they sprout and grow into a new plant.

Specially adapted animals also live in this harsh environment. For example, the small-footed myotis



Small-footed myotis bat

WILLIAM R. ELLIOTT

bat sleeps under rocks or under tree bark during the day. The trees at the edge of glades and rocks on the glade make perfect

bedrooms. The bats fly around the open areas of the glade at night looking for insects to eat.

Another animal that avoids the heat of the day is the tarantula. You will rarely see Missouri's largest spider because it hunts for insects at night and is very shy. By day it hides in rocky crevices or abandoned burrows dug by rodents or reptiles.

Cold-blooded lizards love living in glades, where they can warm themselves on rocks and hide among the crevices. If you are lucky, you might spot the colorful eastern collared lizard. Missouri's largest lizard, it can grow to be more than a foot long.

Collared lizards hunt for insects, spiders, small snakes and other lizards. These fast runners often run on hind legs with the forward part of their



Missouri bladderpod

JIM RATHERT



Hoary puccoon

GARY REESE



Tarantula

JIM RATHERT



Prairie dock

JIM RATHERT

**Greater roadrunner****Painted bunting****Striped scorpion****Red milksnake**

bodies upright. Maybe the collared lizard runs on its hind legs to catch a meal—or to avoid becoming a roadrunner's lunch. Greater roadrunners love to eat lizards, snakes, insects, rodents and berries. They can fly, but they usually use their strong legs to chase their prey. Roadrunners can often be seen running on glades near Branson and along the shore at Table Rock Lake in south Missouri.

Insects make up a large part of the glade community, serving as food for many different kinds of animals. To avoid their predators, glade insects have adapted cunning disguises. The lichen grasshopper, for example, is virtually invisible, even when it is sunning itself out in the open. It can be light gray, pink or green with dark splotches, depending on the color of the rock or lichen it is resting on. This slow-moving insect is easy to catch—if you can see it!

Camouflage also helps the striped scorpion. These venomous insects are the same color as the rocks and logs they live under. Missouri's only scorpion can be found in glades in the southern part of the state. The scorpion comes out at night to hunt for insects and spiders to eat. It uses the sharp stinger at the end of its tail to inject venom into its prey. While deadly to insects, the venom usually isn't dangerous to humans, but the sting is painful.

Glades provide a special habitat where many different types of species live. Each year, some of Missouri's mini deserts disappear. When they do, these desert species also are lost.

A major enemy of glades is the cedar tree. Glade plants and animals depend on sun. Cedar trees can grow in rocky soil and will eventually take over a glade, turning it into a thicket that nothing can walk through. In the past, natural wildfires swept through glades and kept the trees from taking over. Today we control wildfires for safety reasons. But to maintain a healthy glade, owners and managers need to occasionally burn the area when they can do so safely and cut down cedar trees. Without management, glades will eventually disappear.

Overgrazing by cattle is another way glades can be destroyed. Because the soil is thin and water is scarce, plants aren't always tough enough to grow back if they are eaten each year during the growing season. Also, heavy trampling can injure the plants to the point where they

**Black widow**



NOPPADOL PAOTHONG

Lichen grasshopper

can't recover. If the plants die, the roots will no longer be able to hold the soil. Eventually rain and wind may carry the soil away and when the soil and plants are gone, the animals leave. The same thing can happen when people use glades for mountain biking, driving ATVs and horseback riding. These activities can cause the soil to erode quickly.

Before community landfills, people dumped trash and junk on their property. Often the dump was in a glade because the owner didn't see the land as valuable. Over time, cedar trees grew up around the old tires, buckets and wringer washing machines, blocking the sun from the glade.

Today, some people love glades to death. People like to build houses on glades because the hillside provides a great view unblocked by trees. Other people are destroying glades by turning them into quarries and mining the rock.

Because glades are being destroyed, many glade species are rare or endangered in Missouri. You can help these habitats by visiting glades and learning how to identify them. To find the glades listed on the next two pages, go to www.mdc.mo.gov/atlas.



Mead's milkweed

CASEY GALVIN



Geocarpon

KEVIN EULINGER

Where to See Missouri's Glade Hot Spots

Missouri's glades are found in rocky areas of Missouri, such as the Ozarks. These little hot spots are full of unusual, rare and endangered species, but most people never visit them. To see more than rocks, you must sneak up on a glade. Perch upon a rock, sit still and wait for lizards and snakes to venture out of rock crevices looking for insects.

A multi-colored painted bunting looking for insects might fly overhead. Perhaps you will see an eastern towhee hopping backwards, hunting for spiders and insects. But you must come back at night to see tarantulas and striped scorpions do their hunting.

Here is a list of different types of glades and where you can see them.



Dolomite glades look like prairies with lots of exposed bedrock. They usually face south or west. Visit Victoria Glade Conservation Area in Jefferson County near St. Louis, Ha Ha Tonka State Park near the Lake of the Ozarks, or Henning Conservation Area in Branson.



Limestone glades are sometimes found on steep slopes above large streams or rivers—usually facing south or west. Some of the easier places to see this type of glade are Rocky Barrens Conservation Area, the Springfield Conservation Nature Center, or Wilson's Creek National Battlefield in Greene County in Springfield. In Kansas City, visit Burr Oak Woods Conservation Area.

Chert glades are on ridges, slopes and valleys along streams near Joplin in southwest Missouri. Wildcat Glade Natural Area in Wildcat Park is an excellent location to see a chert glade.



JIM RATHER

Sandstone glades are found along narrow valleys or canyons on moderate to steep slopes. They usually face south or west. Lichen and moss grow on undisturbed bedrock. Next time you are traveling between Columbia and St. Louis on I-70, visit Graham Cave State Park and explore the sandstone glades there.

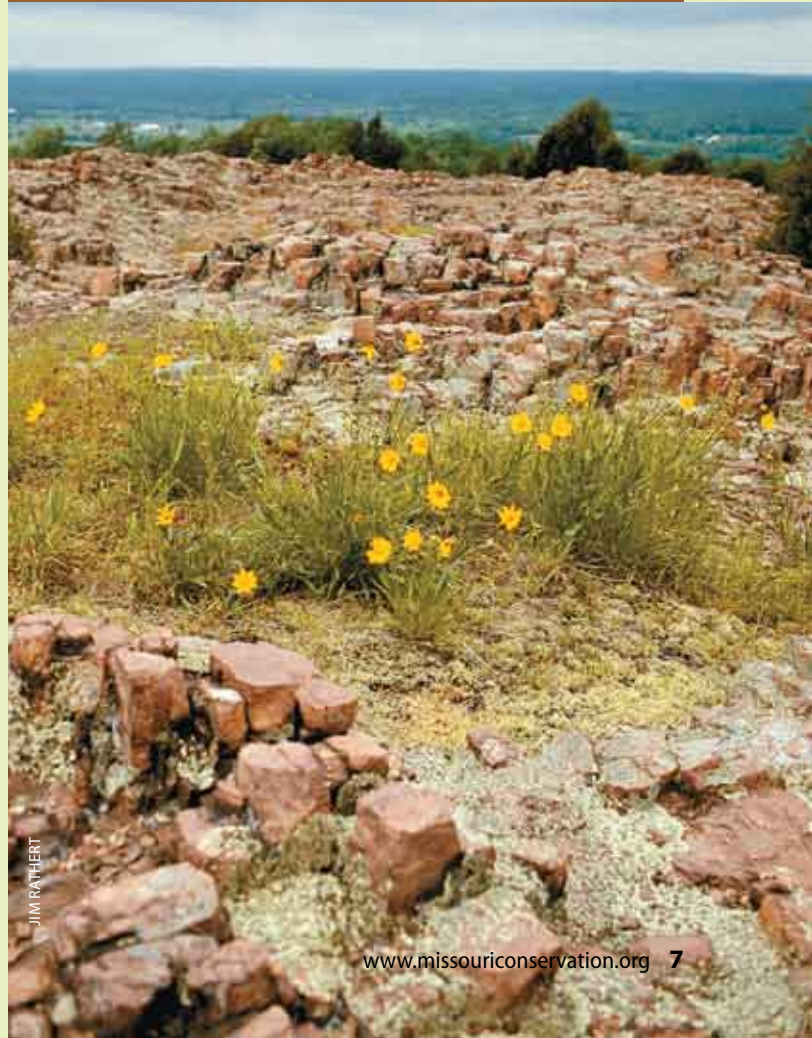
Walk Lightly and Take Nothing but Photos

When you visit your public glades, you will be tempted to turn over rocks or pick flowers. When you feel the urge to take a souvenir, take a photo instead. It will remind you what a great time you had—and it will help you protect one of Missouri's remaining mini deserts.



NOPPADOL PAOTHONG

Igneous (IG-nee-uhs) glades are found on slopes of knobs and mountains and along shut-ins in southeastern Missouri. Ketcherside Mountain Conservation Area in Iron County and Hughes Mountain Natural Area in Washington County are good examples of this type of glade.



JIM RATHER



Nuttall's sedum is one of the plants that can survive on a dry, chert glade. The succulent leaves and stems store water after a rain. The plant's waxy outer surface helps reduce water loss.



Serving nature and you

www.missouriconservation.org

Copyright © 2007 by the Conservation Commission of the State of Missouri

Reprinted from the August 2006 *Missouri Conservationist* magazine.

Equal opportunity to participate in and benefit from programs of the Missouri Department of Conservation is available to all individuals without regard to their race, color, national origin, sex, age or disability. Questions should be directed to the Department of Conservation, P.O. Box 180, Jefferson City, MO 65102, (573) 751-4115 (voice) or 800-735-2966 (TTY), or to the U.S. Fish and Wildlife Service Division of Federal Assistance, 4401 N. Fairfax Drive, Mail Stop: MBSP-4020, Arlington, VA 22203.

E00123 7/07